Munshi G. Mustafa and Markus H. Thoma
(April 3, 2001)

PACS numbers: 12.38.Mh, 24.10.Nz, 25.75.-q

Due to a numerical error the rates for bremsstrahlung (4) and annihilation with scattering (5) in [1], taken from [2], were overestimated by a factor of 4 [3]. The quantities $J_{T,L}$ appearing in (4) and (5) read correctly $J_T = 1.11$, $J_L = -1.07$ for two quark flavors $N_f = 2$ and $J_T = 1.20$, $J_L = -1.13$ for $N_f = 3$, respectively. The photon spectra at RHIC and LHC in equilibrium and chemical non-equilibrium calculated using the corrected rates are shown in Fig.1-4, which replace the corresponding figures in [1].

The new conclusions following from these figures are the following. The total photon yield from the quark-gluon plasma at RHIC and LHC is reduced by a factor 2-3 compared to [1]. At RHIC the non-equilibrium spectrum is smaller by a factor of 5 at $p_T = 1$ GeV, but larger by a factor of 2 at 5 GeV, while it is suppressed at LHC by a factor of about 3 at all momenta compared to the equilibrated case, if the same initial energy density is assumed. Therefore we conclude as in [1] that the equilibrium spectrum is similar to the equlibrating. The annihilation-with-scattering contribution to the spectrum dominates in equilibrium for all momenta, whereas in the equilibrating case the one-loop (Compton scattering, anihilation) contribution is the largest for all momenta and initial conditions (SSPC, HIJING-I, HIJING-II) in contrast to the results found in [1]. The thermal emission in chemical non-equilibrium exceeds now the prompt photon yield for $p_T < 3.5$ GeV at RHIC as well as LHC.

---

[1] M.G. Mustafa and M. H. Thoma, Phys. Rev. C **62**, 014902 (2000).
[2] P. Aurenche, F. Gelis, R. Kobes, and H. Zaraket, Phys. Rev. D **58**, 085003 (1998).
[3] F.D. Steffen and M.H. Thoma, ⟨hep-ph/0103044⟩.

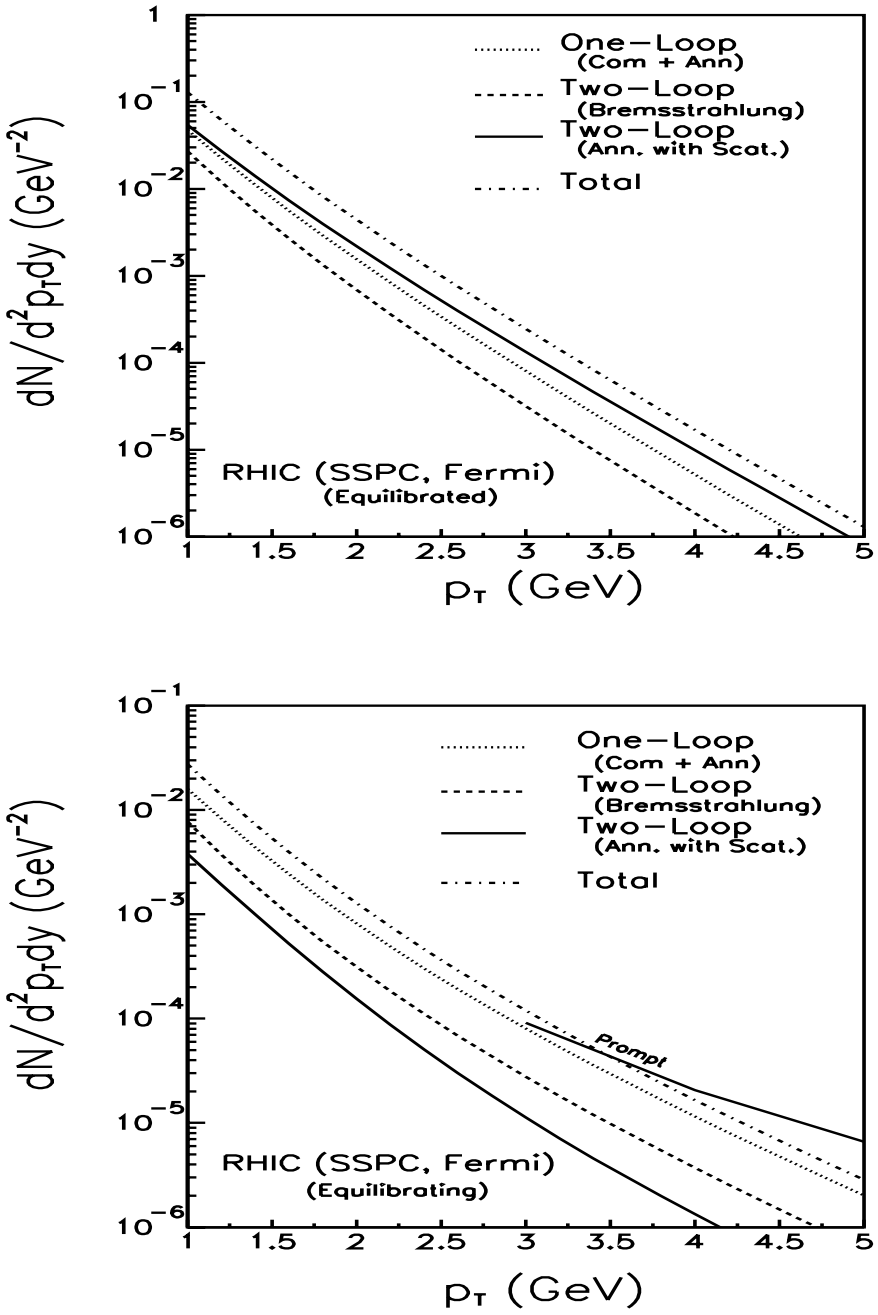
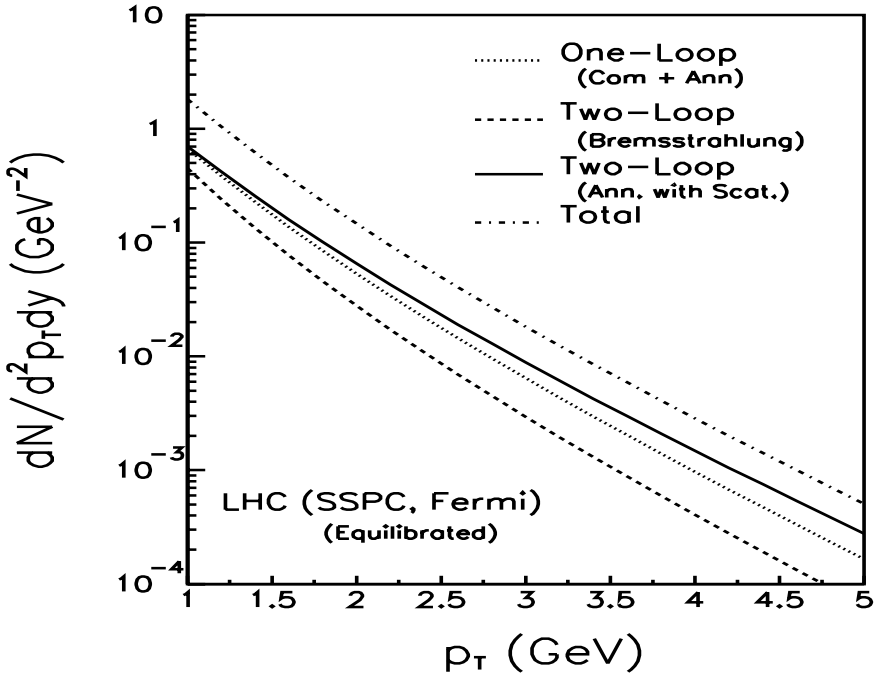


FIG. 1. Photon spectra from various processes at RHIC energies with SSPC initial conditions and the Fermi-like profile function. The upper panel represents the fully equilibrated scenario, whereas the lower panel corresponds to the chemically equilibrating scenario.



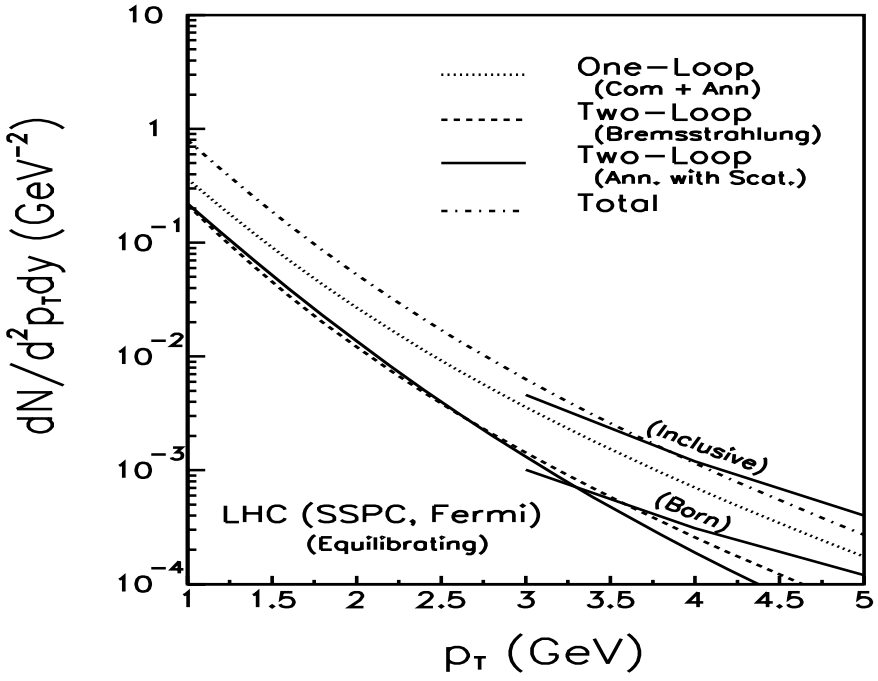


FIG. 2. Same as Fig.1 for LHC energies.

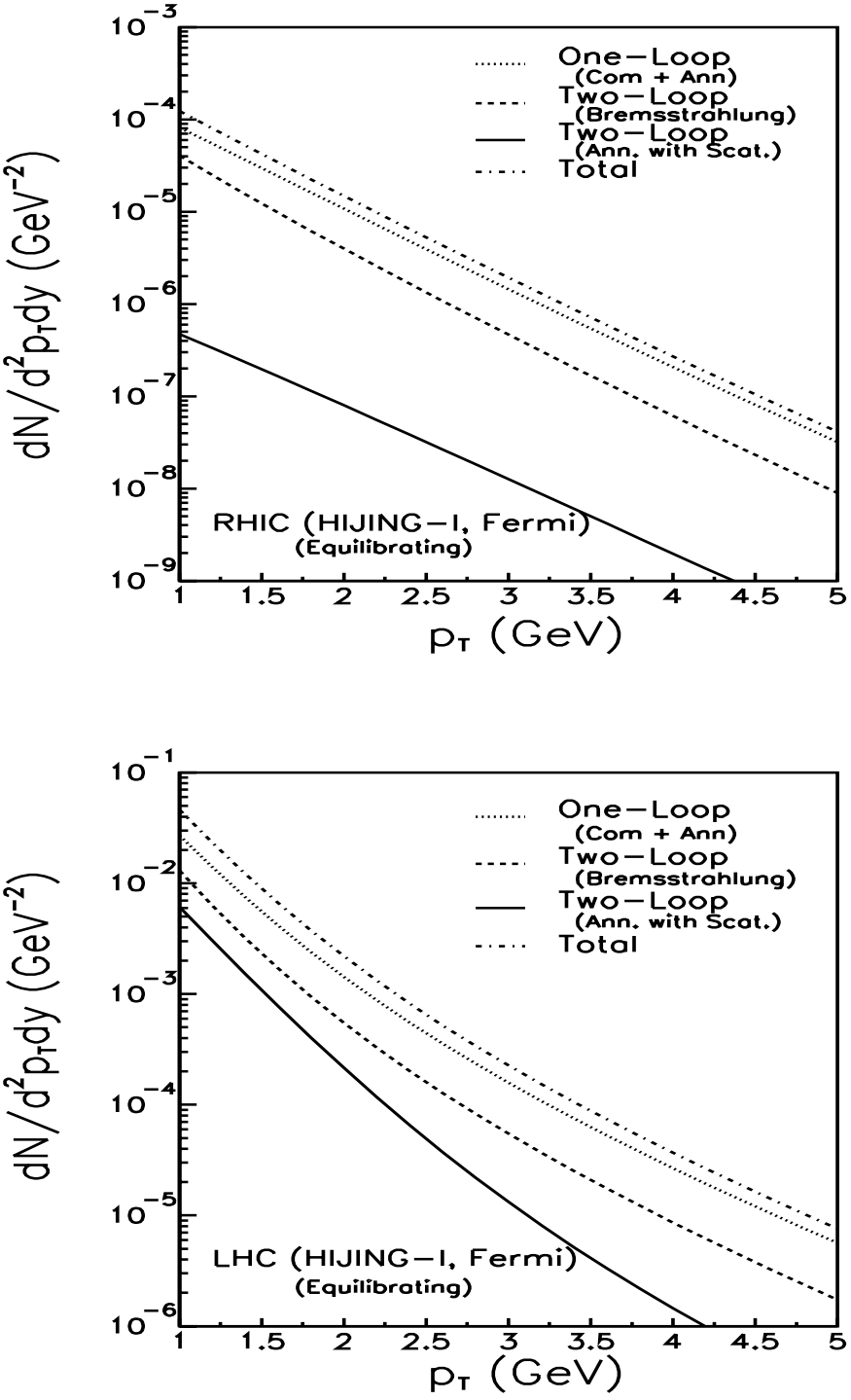
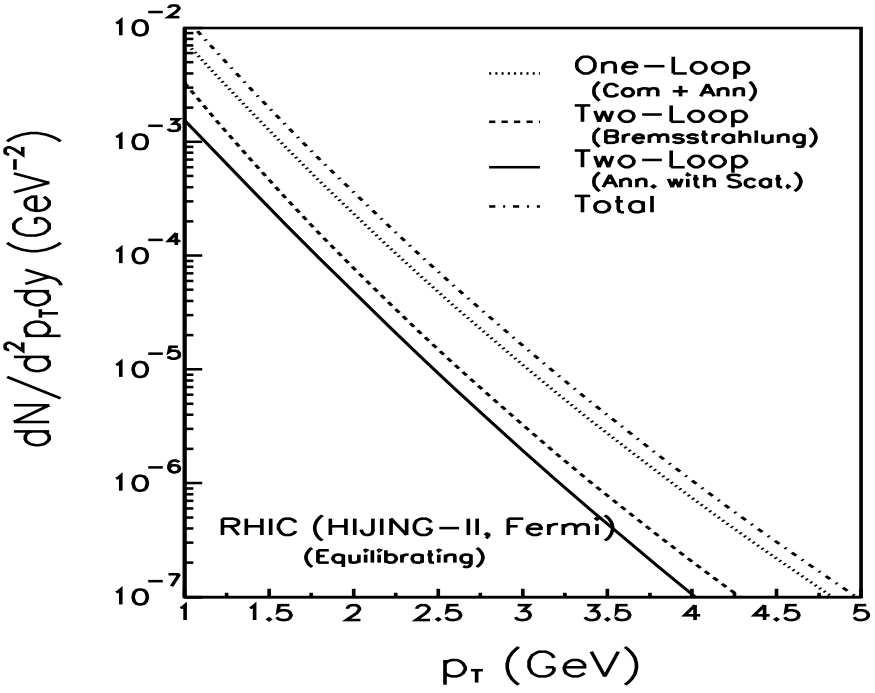


FIG. 3. Photon spectra for a chemically equilibrating plasma at RHIC (upper panel) and LHC (lower panel) energies with HIJING-I initial conditions and the Fermi-like profile function.



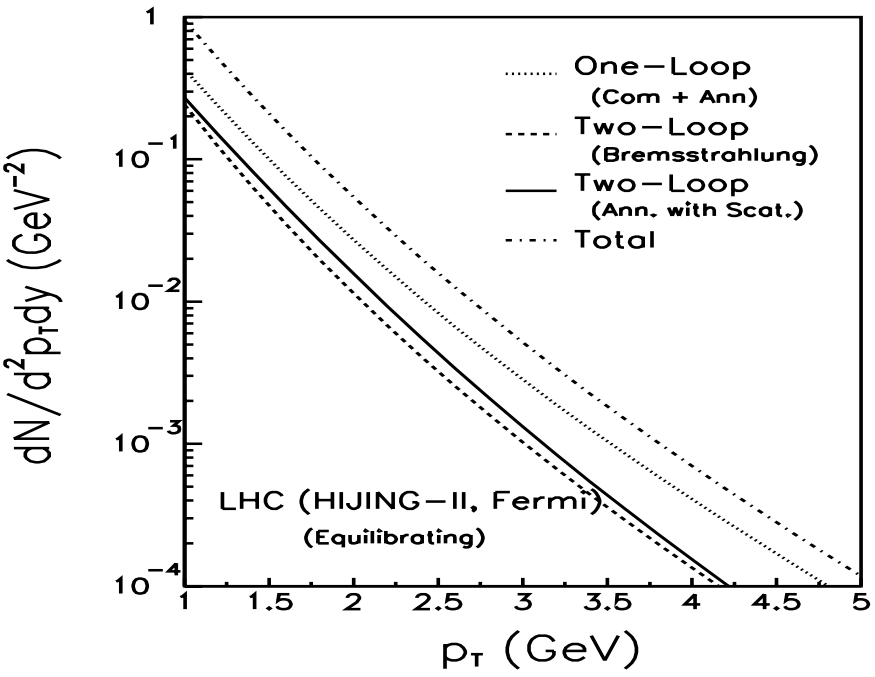


FIG. 4. Same as Fig.3 with HIJING-II initial conditions.